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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,318	10/31/2003	Jon Irvin Stuckey	P02073US2ABFNT	9814

48985 7590 05/04/2009
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EXAMINER	
GUILL, RUSSELL L	

ART UNIT	PAPER NUMBER
2123	

MAIL DATE	DELIVERY MODE
05/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,318	STUCKEY, JON IRVIN	
	Examiner	Art Unit	
	Russ Guill	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,21,22 and 25-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,21,22 and 25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/9/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to a Request for Continued Examination filed March 9, 2009. Claims 15 - 18 and 23 - 24 were canceled. Claims 25 - 28 were added. Claims 1 – 14, 21 – 22 and 25 - 28 are pending and have been examined. Claims 1 – 14, 21 – 22 and 25 - 28 have been rejected.

2. If the Applicant has any questions regarding the rejections under 35 U.S.C. § 101 below, the Applicant is invited to call the Examiner to review proposed claim amendments.

3. **The Examiner would like to thank the Applicant for the well presented response. The Examiner appreciates the effort to carefully analyze the Office Action, and make appropriate and clear arguments and amendments.**

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 9, 2009 has been entered.

Response to Remarks

5. Regarding claims 1 and 21 objected to for not being tied to another statutory class:

   a. Applicant's arguments have been fully considered, but are not persuasive, as follows.

b. The Applicant argues that the claims have been amended to recite arranging tread lugs on a tire tread of a pneumatic tire, which overcomes the rejection. The Examiner respectfully replies: the claim amendment appears to be only post-solution activity, and thus the method still does not appear to be tied to a machine. Accordingly, a rejection is made below.

6. Regarding claims 11, 12, 13, 14 objected to for antecedent issues:

a. Applicant's amendments to the claims overcome the rejection.

7. Regarding claim 1 rejected under 35 USC § 103:

a. Applicant's arguments have been fully considered, but are not persuasive, as follows.

b. The Applicant essentially argues that the Sekula reference does not teach *non-randomly* selecting amplitudes and phases, as recited in the amended claims. The Examiner respectfully replies: While the Examiner appreciates the Applicant's arguments, the Examiner respectfully notes that Sekula appears to teach the amended limitation. While Sekula teaches using a "white-noise" generator to select the amplitudes and phases as an often preferable method, which may be considered a random selection of amplitudes and phases, Sekula also clearly teaches using any pre-selected periodic audio frequency spectrum instead of white-noise (*for example, see column 3, lines 19 - 24*), which is non-random. Thus, Sekula appears to teach the limitation, and accordingly, the rejection is maintained.

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1 – 14, 21 – 22 and 25 - 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. Regarding independent claims 1 and 21, and associated dependent claims, a valid process under 35 USC § 101 must either (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. In order to qualify as a statutory process, the claim should positively recite the particular machine or apparatus to which it is tied, for example by identifying the apparatus that accomplishes the method steps. A recitation of a computer in the preamble does not appear to be sufficient to tie the process to a particular apparatus. While the claims recite arranging tread lugs on a tire tread of a pneumatic tire, this activity appears to be post-solution activity, and thus does not tie the method to a particular machine, and also does not appear to transform a particular article.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 1 – 2, 6 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekula (U.S. Patent Number 4,442,499) in view of Kogure (U.S. Patent Number 5,383,506).

a. The art of Sekula is directed to a method for producing pneumatic tires having pre-selected noise characteristics (Title and Abstract).

b. The art of Kogure is directed to the art of pneumatic tires having reduced noise (Title and Abstract).

c. The art of Sekula and the art of Kogure are analogous art because they both contain the art of noise reduction for pneumatic tires.

d. Regarding **claim 1**:

e. Sekula appears to teach:

i. selecting at least a first, a second, and a third modulation order (**figure 1, element 11, and figure 2A, spectral amplitudes and frequencies; it would have been obvious that at least three modulation orders were produced, especially in light of Kogure, figure 9**);

ii. non-randomly selecting the amplitude for each of the selected modulation orders; ~~the amplitudes of the first modulation and second modulation orders being smaller than or equal to the amplitude of the third modulation order~~ (**figure 1, element 11, and figure 2A; it would have been obvious that element 11 produced an amplitude of a modulation order; and figure 4; and column 2, lines 19 – 30; and column 4, lines 31 – 55; and column 10, lines 50 - 67**);

iii. non-randomly selecting the phase for each of the selected modulation orders (**figure 1, element 12; it would have been obvious that element 11 produced a phase of a modulation order because in order for element 12 to sum the periodic functions cosine/sine, it would have required a phase; and figure 4; and column 2, lines 19 – 30; and column 4, lines 31 – 55; and column 10, lines 50 – 67**);

iv. creating a function for each modulation order that includes the defined amplitude and phase of the modulation order (**figure 1, element 12; it would have been obvious that element 12 produced a cosine and/or sine function for**

each modulation order; and figure 4; and column 2, lines 25 – 30; and column 4, lines 31 – 55; and column 10, lines 50 - 67);

v. summing the created functions for each modulation order to define a summation of the functions (**figure 1, element 12; it would have been obvious that element 12 produced a wave that was the sum of the functions; and column 2, lines 20 – 25; and column 4, lines 31 – 55; and column 10, lines 50 - 67**);

vi. defining a tire noise pitch sequence from the summation of the functions (**column 2, lines 35 – 55; and column 10, lines 50 - 67**);

vii. Arranging tread lugs on a tire tread of a pneumatic tire to match the tire noise pitch sequence (**figure 3**).

f. Sekula does not specifically teach:

i. ~~selecting the amplitude for each of the selected modulation orders~~; the amplitudes of the first modulation and second modulation orders being smaller than or equal to the amplitude of the third modulation order;

g. Kogure appears to teach:

i. the amplitudes of the first modulation and second modulation orders being smaller than or equal to the amplitude of the third modulation order (**figure 9, graph of B6**);

h. The motivation to use the art of Kogure with the art of Sekula would have been the benefit recited in Kogure that the invention provides a pneumatic tire improved in comfort through an improved pitch arrangement to reduce pulsation sound pressure level (**column 3, lines 5 - 14**).

i. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Kogure with the art of Sekula to produce the invention of claim 1.

j. Regarding **claim 2**:

k. Sekula appears to teach:

i. calculating a determined number of pitch sizes from the summation of the functions (**column 2, lines 15 – 55; and column 10, lines 50 - 67**).

l. Regarding **claim 6**:

m. Sekula does not specifically teach:

i. selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and fitting the determined number of pitch sizes to the selected number of pitch sizes.

n. Kogure appears to teach:

i. selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and fitting the determined number of pitch sizes to the selected number of pitch sizes (**column 3, lines 5 – 45**).

o. Regarding **claim 11**:

p. Sekula does not specifically teach:

i. selecting between 3 and 7 modulation orders.

q. Kogure appears to teach:

i. selecting between 3 and 7 modulation orders (**column 3, lines 5 – 45; and figure 9**).

12. **Claims 3 – 5, 7 – 10 and 12 - 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekula as modified by Kogure as applied to **claims 1 – 2, 6 and 11** above, further in view of Stuckey (U.S. Patent Application 2003/0040886).

a. Sekula as modified by Kogure teaches a method for designing a tire noise pitch sequence as recited in **claims 1 – 2, 6 and 11** above.

b. The art of Stuckey is directed to the art of analyzing tire tread patterns for tire noise.

c. Regarding **claim 3**:

d. Sekula does not specifically teach:

i. using the accumulation of the deviation of the arc length from the arc length of the mean pitch size.

e. Stuckey appears to teach:

i. using the accumulation of the deviation of the arc length from the arc length of the mean pitch size (**paragraphs [0031] - [0039]**).

f. The motivation to use the art of Stuckey with the art of Sekula as modified by Kogure would have been the benefit recited in Stuckey that the invention allows eliminating tire designs having undesirable tire noise before sample tires are produced (**paragraph [0026]**).

g. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Stuckey with the art of Sekula as modified by Kogure produce the invention of claim 3.

h. Regarding **claim 4**:

i. Sekula does not specifically teach:

i. interpolating a curve defined by the accumulation of the deviation of the arc length from the arc length of the mean pitch size.

j. Stuckey appears to teach:

i. interpolating a curve defined by the accumulation of the deviation of the arc length from the arc length of the mean pitch size (**paragraphs [0031] - [0039]**).

k. Regarding **claim 5**:

l. Sekula does not specifically teach:

i. selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and fitting the determined number of pitch sizes to the selected number of pitch sizes.

m. Kogure appears to teach:

i. selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and fitting the determined number of pitch sizes to the selected number of pitch sizes (**column 3, lines 5 – 45**).

n. Regarding **claim 7**:

o. Sekula does not specifically teach:

i. setting the selected number of pitch sizes to a number between 3 and 7.

p. Kogure appears to teach:

i. setting the selected number of pitch sizes to a number between 3 and 7 (**column 3, lines 35 – 40**).

q. Regarding **claim 8**:

r. Sekula does not specifically teach:

i. identifying the range of determined number of pitch sizes and evenly dividing the identified range by the selected number of pitch sizes.

s. Stuckey appears to teach:

i. identifying the range of determined number of pitch sizes and evenly dividing the identified range by the selected number of pitch sizes (**paragraph [0040]**).

t. Regarding **claim 9**:

u. Sekula does not specifically teach:

i. selecting the number of different pitch sizes to be 5 and selecting the pitch ratios to be 1.00, 1.10, 1.25, 1.40, and 1.50.

v. Kogure appears to teach:

i. selecting the number of different pitch sizes to be 5 and selecting the pitch ratios to be 1.00, 1.10, 1.25, 1.40, and 1.50 (**column 3, lines 5 – 45**).

w. Regarding **claim 10**:

x. Sekula does not specifically teach:

i. selecting the number of different pitch sizes to be 3 and selecting the pitch ratios to be 1.00, 1.25, and 1.50.

y. Kogure appears to teach:

i. selecting the number of different pitch sizes to be 3 and selecting the pitch ratios to be 1.00, 1.25, and 1.50 (**column 3, lines 5 – 45**).

z. Regarding **claim 12**:

aa. Sekula does not specifically teach:

i. defining the amplitudes of the first and second modulation orders to be smaller than the amplitudes of the remaining selected modulation orders.

bb. Stuckey appears to teach:

i. defining the amplitudes of the first and second modulation orders to be smaller than the amplitudes of the remaining selected modulation orders (**figure 2D**).

cc. Regarding **claim 13**:

dd. Sekula does not specifically teach:

i. defining the amplitudes of the first and second modulation orders to be zero.

ee. Stuckey appears to teach:

i. defining the amplitudes of the first and second modulation orders to be zero (**figure 2D**).

ff. Regarding **claim 14**:

gg. Sekula does not specifically teach:

i. varying the amplitudes for the selected modulation orders.

hh. Stuckey appears to teach:

i. varying the amplitudes for the selected modulation orders (**figure 2D**).

13. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Allowable Subject Matter

14. Regarding claims 21 – 22, 25 - 28, any indication of allowability is withheld pending resolution of the outstanding issues.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is (571)272-7955. The examiner can normally be reached on Monday – Friday 9:30 AM – 6:00 PM.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-375353. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner
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RG

/Paul L Rodriguez/
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